

SAT-Reasoning-Stereo Type Problems set 1

Ratio and Proportion

	Question	Answer
1	<p>A \$50,000 prize is divided among four winners in a ratio of 4:3:2:1. What is the greatest amount of money that any winner receives?</p> <p>(A) \$5,000 (B) \$10,000 (C) \$12,500 (D) \$20,000 (E) \$40,000</p>	<p>D The sum of the parts is $4 + 3 + 2 + 1 = 10$. Therefore, the parts are $\frac{4}{10}$, $\frac{3}{10}$, $\frac{2}{10}$, and $\frac{1}{10}$ of the whole. The largest share, then, is $(\\$50,000)(\frac{4}{10}) = \\$20,000$.</p>
2	<p>The measures of the four angles in a quadrilateral have a ratio of 3:4:5:6. What is the measure, in degrees, of the smallest of these angles?</p>	<p>The sum of the four angles in a quadrilateral is 360°. The sum of the parts in the ratio is $3 + 4 + 5 + 6 = 18$. Therefore the angles are $\frac{3}{18}$, $\frac{4}{18}$, $\frac{5}{18}$, and $\frac{6}{18}$ of the whole, which is 360°. So the smallest angle measures $(\frac{3}{18})(360^\circ) = 60^\circ$.</p>
3	<p>If 3,600 baseball caps are distributed to 4 stores in the ratio of 1:2:3:4, what is the maximum number of caps that any one store receives?</p> <p>(A) 360 (B) 720 (C) 1,080 (D) 1,440 (E) 14,400</p>	<p>D The ratio is a "ratio of parts" with a sum of $1 + 2 + 3 + 4 = 10$. The largest part, then, is $\frac{4}{10}$ of the whole. $\frac{4}{10}$ of 3,600 = $.4 \times 3,600 = 1,440$.</p>
4	<p>The ratio of men to women in a room is 4:5. If the room contains three more women than men, how many women are in the room?</p>	<p>Ratios such as 4:5 can also be written as $4x:5x$. So the number of men m is $4x$ and the number of women w is $5x$. Plug those values into the equation $w = m + 3$ $5x = 4x + 3$ Subtract $4x$: $x = 3$ Plug 3 in to $5x$: $w = 5x = 5(3) = 15$</p>
5	<p>90 students are at a meeting. The ratio of girls to boys at the meeting is 2 to 3. How many girls are at the meeting?</p> <p>(A) 30 (B) 36 (C) 40 (D) 54 (E) 60</p>	<p>B 2:3 is a "part to part" ratio, with a sum of 5. Therefore $\frac{2}{5}$ of the students are girls and $\frac{3}{5}$ are boys. $\frac{2}{5}$ of 90 = 36.</p>